

# SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: VICTOR NGUYEN Examiner #: 79390 Date: 6/19/03  
 Art Unit: 3731 Phone Number 305-4898 Serial Number: 121085190  
 Mail Box and Bldg/Room Location: SPR-3731 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.  
 \*\*\*\*\*

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: MicroKerstone blades and Methods of Making  
 Inventors (please provide full names): Theodore WORTRICH

Earliest Priority Filing Date: 2/28/01

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Please CONVEINIENT IN A METHOD OF FABRICATING MicroKerstone Blade  
 from a stack (strip) of Metal as cited in claim I.  
 Focus on the steps of separating the blades into individual units  
 and finishing the MicroKerstone blades by lifting the blade backs to  
 remove burrs and introduce radial curvatures in the posterior  
 boundary edges while preserving the cutting edges.

## STAFF USE ONLY

Searcher: <u>J Walker</u>	Type of Search	Vendors and cost where applicable
Searcher Phone #: <u>305-8587</u>	NA Sequence (#) _____	STN _____
Searcher Location: <u>CP2-2008</u>	AA Sequence (#) _____	Dialog <u>✓</u>
Date Searcher Picked Up: <u>6/20/03</u>	Structure (#) _____	Questel/Orbit _____
Date Completed: <u>6/20/03</u>	Bibliographic <u>✓</u>	Dr Link _____
Searcher Prep & Review Time: _____	Litigation _____	Lexis/Nexis _____
Clerical Prep Time: _____	Fulltext <u>✓</u>	Sequence Systems _____
Online Time: <u>23 hr</u>	Patent Family _____	WWW/Internet <u>✓</u>
	Other _____	Other (specify) _____



# STIC Search Report

## EIC 3700

STIC Database Tracking Number: 97095

TO: Victor Nguyen  
Location: CP2-2B14  
Art Unit: 3731  
Friday, June 20, 2003

Case Serial Number: 10/085190

From: Julie Walko  
Location: EIC 3700  
CP2-2C08  
Phone: 305-8587

Julie.walko@uspto.gov

### Search Notes

Victor:

Attached are the results to your request regarding a method of manufacturing microkeratomes.

I limited my search to ophthalmic blades or microkeratomes that have an aperture and a curved blade. I found that this was fairly limiting, so did not get into any more detail. Although I marked some items that appear relevant, I recommend you review the entire packet.

If you have any questions or would like this search reworked in any way, please do not hesitate to contact Jeanne Horrigan at 305-5934 or [Jeanne.horrigan@uspto.gov](mailto:Jeanne.horrigan@uspto.gov) as today is my last day at the PTO.


[Advanced Search](#)
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The following words are very common and were not included in your search:  
**with an.** [\[details\]](#)

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Searched the web for **curved microkeratome with an aperture**. Results 1 - 10 of about 23. Search took 0.14 sec

#### [PDF] Page 1

File Format: PDF/Adobe Acrobat - View as HTML

... Flexible Tip Polisher (Engels) 27g 585218 1802022 10 **Curved** 40° Flexible Tip  
 Cannula 27g ... Overall size: 40 x 26cm **Aperture** area: 2.5 x 3.75cm VISIFLEX TM ...  
[www.opsm.com/inst/pdf/2002catalogue\\_pt1.pdf](http://www.opsm.com/inst/pdf/2002catalogue_pt1.pdf) - [Similar pages](#)

#### Piedmont Better Vision : Better Vision for Life : Surgical ...

... the surface of a football- more steeply **curved** in one ... **MICROKERATOME**: Automated surgical instrument used to create a thin ... enters the eye, like the **aperture** of a ...  
[www.piedmontbettervision.com/surgical\\_glossary.html](http://www.piedmontbettervision.com/surgical_glossary.html) - 24k - [Cached](#) - [Similar pages](#)

#### Victoria Eye Center

... surface of a football - more steeply **curved** in one ... **MICROKERATOME** - Automated surgical instrument used to create a thin ... enters the eye, like the **aperture** of a ...  
[www.victoriaeyecenter.com/pages/glossary.html](http://www.victoriaeyecenter.com/pages/glossary.html) - 30k - [Cached](#) - [Similar pages](#)

#### Spectra-Physics Business Units

... a treatment method in which a **microkeratome** is used ... LENS A **curved** piece of optically transparent material which ... and the area of the limiting **aperture** (7mm for ...  
[www.spectraphysics.com/glossary/l.html](http://www.spectraphysics.com/glossary/l.html) - 17k - [Cached](#) - [Similar pages](#)

#### Tropical Optical - Glossary

... Eye, right: The **aperture** in front of the wearer's ... in which the flap created with the **microkeratome** has not ... Surface, spheric: A **curved** surface having the same ...  
[www.opticatropical.com/glossary.html](http://www.opticatropical.com/glossary.html) - 57k - [Cached](#) - [Similar pages](#)

#### eMedicine - Astigmatism, PRK : Article by Manolette R Roque, MD

... An automated **microkeratome**, similar to that used in ALK ... who are nearsighted and a more **curved** surface for ... passes through a beam-shaping **aperture**, delivering a ...  
[www.emedicine.com/oph/topic657.htm](http://www.emedicine.com/oph/topic657.htm) - 101k - [Cached](#) - [Similar pages](#)

#### LASIK Surgery Article

... Functioning much like the **aperture** of a camera ... a cornea that is too steeply **curved**, creating an ... Simultaneously, a **microkeratome** (similar to a carpenter's plane ...  
[www.medmal-law.com/refractive\\_surgery.article.htm](http://www.medmal-law.com/refractive_surgery.article.htm) - 34k - [Cached](#) - [Similar pages](#)

#### Zion Eye Institute

... **Microkeratome** an automated device used to create a flap on ... who are nearsighted and a more **curved** surface for ... Operating much like the **aperture** of a camera, the ...  
[www.zioneyeinstitute.com/visionglossary1.htm](http://www.zioneyeinstitute.com/visionglossary1.htm) - 70k - [Cached](#) - [Similar pages](#)

#### [PDF] Page 1

File Format: PDF/Adobe Acrobat - View as HTML

... cornea and the lens), a variable **aperture** system that ... When the cornea is improperly **curved**, it cannot properly ... a type of knife called a **microkeratome** to open a ...  
[media.corporate-ir.net/media\\_files/NYS/EYE/reports/annual98.pdf](http://media.corporate-ir.net/media_files/NYS/EYE/reports/annual98.pdf) - [Similar pages](#)

[PDF] Excimer Laser In Situ Keratomileusis to Correct Compound Myopic ...

File Format: PDF/Adobe Acrobat - [View as HTML](#)

... beam of light that scans across an **aperture** within the ... and to lubricate the advance of the **microkeratome** head in ... on the suction ring with a **curved** non-toothed ...

[jrs.slackinc.com/vol136/alaa.pdf](http://jrs.slackinc.com/vol136/alaa.pdf) - [Similar pages](#)

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curved microkeratome with an ap

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Inventor  
Search

2/5/1 (Item 1 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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014979723 \*\*Image available\*\*

WPI Acc No: 2003-040238/200303

XRPX Acc No: N03-031587

**Microkeratome blade fabrication method for ophthalmic surgical procedures, involves electric discharge machining blade blanks to form curved posterior walls and interior aperture**

Patent Assignee: WORTRICH T (WORT-I)

Inventor: **WORTRICH T**

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20020143351	A1	20021003	US 2001272021	A	20010228	200303 B
			US 200285190	A	20020227	

Priority Applications (No Type Date): US 2001272021 P 20010228; US 200285190 A 20020227

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20020143351	A1		9	A61F-009/00	Provisional application US 2001272021

Abstract (Basic): US 20020143351 A1

NOVELTY - The blade blanks are electric discharge machined to form curved posterior walls extending substantially continuously between the opposite ends of the cutting edges and an interior aperture in each blade blank.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for **microkeratome** blade.

USE - For fabricating **microkeratome** blade (claimed) used in ophthalmic surgical procedures such as laser in-situ keratomileusis (LASIK).

ADVANTAGE - Since blade blanks are electric discharge machined to form curved posterior walls and interior aperture, the introduction of stress points and local non-uniformities in the course of manufacture is minimized and manufacturing process is simplified, thereby obtaining a high yield during production.

DESCRIPTION OF DRAWING(S) - The figure shows a perspective view of **microkeratome** blade and holder.

pp; 9 DwgNo 1/8

Title Terms: BLADE; FABRICATE; METHOD; OPHTHALMIC; SURGICAL; PROCEDURE; ELECTRIC; DISCHARGE; MACHINING; BLADE; BLANK; FORM; CURVE; POSTERIOR; WALL; INTERIOR; APERTURE

Derwent Class: P32; X24

International Patent Class (Main): A61F-009/00

File Segment: EPI; EngPI

Set	Items	Description
S1	15	AU='WORTRICH T':AU='WORTRICH THEODORE S'
S2	1	S1 AND (MICROKERATOME? ? OR MICRO()KERATOME? ?)

? show files

File 347:JAPIO Oct 1976-2003/Feb(Updated 030603)  
(c) 2003 JPO & JAPIO

File 348:EUROPEAN PATENTS 1978-2003/Jun W03  
(c) 2003 European Patent Office

File 349:PCT FULLTEXT 1979-2002/UB=20030612,UT=20030605  
(c) 2003 WIPO/Univentio

File 350:Derwent WPIX 1963-2003/UD,UM &UP=200338  
(c) 2003 Thomson Derwent

File 371:French Patents 1961-2002/BOPI 200209  
(c) 2002 INPI. All rts. reserv.

B7 1/13  
NPL

7/5/1 (Item 1 from file: 144)  
DIALOG(R) File 144:Pascal  
(c) 2003 INIST/CNRS. All rts. reserv.

15167128 PASCAL No.: 01-0331407  
**Direct measurement of microkeratome gap width by electron microscopy**  
LIU King-Yu; LAM Dennis S C  
Department of Ophthalmology & Visual Sciences, The Chinese University of  
Hong Kong, Hong Kong Eye Hospital, Kowloon, Hong Kong  
Journal: Journal of cataract and refractive surgery, 2001; 27 (6)  
924-927  
ISSN: 0886-3350 CODEN: JCSUEV. Availability: INIST-20937;  
354000096531070200  
No. of Refs.: 4 ref.  
Document Type: P (Serial) ; A (Analytic)  
Country of Publication: United States  
Language: English  
Purpose: To perform an accurate direct measurement of the **microkeratome**  
gap width using scanning electron microscopy (SEM). Setting: Electron  
Microscope Unit, University of Hong Kong, Hong Kong, China. Methods: The  
Cambridge Stereoscan S440 scanning electron microscope was used to measure  
the gap width of 4 SCMD **microkeratomes** with high accuracy (  $\pm 1.5 \mu m$  ).  
Results: The **manufacturer** 's gap specification for the 4 **microkeratomes**  
was 150.0  $\mu m$ . The gap width measurements using SEM were 164.7  $\mu m$ , 190.0  
 $\mu m$ , 200.6  $\mu m$ , and 145.9  $\mu m$  and the respective errors, 9.8%, 26.7%,  
33.7%, and 2.7%. Two of the 4 **microkeratomes** had more than a 25% error in  
gap width from the specification. Conclusions: The great variation in gap  
width from the **manufacturer** 's specification for the 4 SCMD  
**microkeratomes** was beyond the standard of tolerance normally accepted in  
laser in situ keratomileusis (LASIK). Many unexpected LASIK-related  
keratectasia and corneal perforations may be related to substandard  
**microkeratome manufacturing** and calibration. All new **microkeratomes**  
and blades should be validated before use to avoid keratectasia and other  
flap problems in LASIK.

Set	Items	Description
S1	1561	MICROKERATOME? ? OR MICRO()KERATOME? ? OR (EYE? ? OR OCULAR? OR INTRAOCULAR? OR OPHTHALM?) (3N) (KNIFE OR KNIVES OR BLADE? ? OR SCALPEL? ?)
S2	2632014	FABRICAT? OR MANUFACTUR?
S3	2672808	TAPER? OR CONVEX? OR CURV? OR CAMBER? OR ARCH???? OR BEND? OR BENT
S4	5736714	SEPARAT? OR DIVID? OR DIVIS? OR DISCONNECT? OR SPLIT? OR DETACH?
S5	1295522	SLOT OR SLOTS OR APERTURE? ? OR OPENING? ? OR HOLE? ? OR F-ENESTRA? OR ORIFICE? ?
S6	1	S1 AND S2 AND S5
S7	1	S6 NOT PY>2001
? show files		
File	2:INSPEC	1969-2003/Jun W2 (c) 2003 Institution of Electrical Engineers
File	5:Biosis Previews(R)	1969-2003/Jun W3 (c) 2003 BIOSIS
File	6:NTIS	1964-2003/Jun W4 (c) 2003 NTIS, Intl Cpyrght All Rights Res
File	8:Ei Compendex(R)	1970-2003/Jun W2 (c) 2003 Elsevier Eng. Info. Inc.
File	34:SciSearch(R)	Cited Ref Sci 1990-2003/Jun W3 (c) 2003 Inst for Sci Info
File	35:Dissertation Abs Online	1861-2003/May (c) 2003 ProQuest Info&Learning
File	65:Inside Conferences	1993-2003/Jun W3 (c) 2003 BLDSC all rts. reserv.
File	73:EMBASE	1974-2003/Jun W3 (c) 2003 Elsevier Science B.V.
File	94:JICST-EPlus	1985-2003/Jun W3 (c) 2003 Japan Science and Tech Corp(JST)
File	144:Pascal	1973-2003/Jun W1 (c) 2003 INIST/CNRS
File	155:MEDLINE(R)	1966-2003/Jun W3 (c) format only 2003 The Dialog Corp.
File	172:EMBASE Alert	2003/Jun W3 (c) 2003 Elsevier Science B.V.
File	198:Health Devices Alerts(R)	1977-2003/Jun W4 (c) 2003 ECRI-nonprft agncy
File	434:SciSearch(R)	Cited Ref Sci 1974-1989/Dec (c) 1998 Inst for Sci Info
File	48:SPORTDiscus	1962-2003/May (c) 2003 Sport Information Resource Centre
File	71:ELSEVIER BIOBASE	1994-2003/Jun W3 (c) 2003 Elsevier Science B.V.
File	91:MANTIS(TM)	1880-2002/Oct 2002 (c) Action Potential
File	162:Global Health	1983-2003/May (c) 2003 CAB International
File	164:Allied & Complementary Medicine	1984-2003/Jun (c) 2003 BLHCIS
File	467:ExtraMED(tm)	2000/Dec (c) 2001 Informania Ltd.
File	25:Weldasearch	1966-2002/Dec (c) 2003 TWI Ltd
File	31:World Surface Coatings Abs	1976-2003/May (c) 2003 Paint Research Assn.
File	50:CAB Abstracts	1972-2003/May (c) 2003 CAB International



File 51:Food Sci.&Tech.Abs 1969-2003/Jun W2  
(c) 2003 FSTA IFIS Publishing  
File 53:FOODLINE(R): Food Science & Technology 1972-2003/Jun 18  
(c) 2003 LFRA  
File 67:World Textiles 1968-2003/Jun  
(c) 2003 Elsevier Science Ltd.  
File 95:TEME-Technology & Management 1989-2003/Jun W1  
(c) 2003 FIZ TECHNIK  
File 99:Wilson Appl. Sci & Tech Abs 1983-2003/May  
(c) 2003 The HW Wilson Co.  
File 103:Energy SciTec 1974-2003/May B2  
(c) 2003 Contains copyrighted material  
File 118:ICONDA-Intl Construction 1976-2003/Jun  
(c) 2003 Fraunhofer-IRB  
File 119:Textile Technol.Dig. 1978-2003/Jun  
(c) 2003 Inst.of Textile Technology  
File 240:PAPERCHEM 1967-2003/Jun W3  
(c) 2003 Elsevier Eng. Info. Inc.  
File 248:PIRA 1975-2003/Jun W3  
(c) 2003 Pira International  
File 315:ChemEng & Biotec Abs 1970-2003/May  
(c) 2003 DECHEMA  
File 354:Ei EnCompassLit(TM) 1965-2003/Jun W3  
(c) 2003 Elsevier Eng. Info. Inc.

10/5,K/1 (Item 1 from file: 348)  
DIALOG(R)File 348:EUROPEAN PATENTS  
(c) 2003 European Patent Office. All rts. reserv.

01420855

**Blade with amorphous cutting edge**

PATENT ASSIGNEE:

Gebauer GmbH, (3903060), Monbachstrasse 7/1, 75242 Neuhausen, (DE),  
(Applicant designated States: all)

INVENTOR:

Gebauer, Detlev P., Dipl.-Ing. (FH), Grabenstrasse 28, 75233 Tiefenbrunn,  
(DE)

LEGAL REPRESENTATIVE:

Leson, Thomas Johannes Alois, Dipl.-Ing. (78982), Tiedtke-Buhling-Kinne &  
Partner GbR, TBK-Patent, Bavariaring 4, 80336 Munchen, (DE)

PATENT (CC, No, Kind, Date): EP 1199055 A1 020424 (Basic)

APPLICATION (CC, No, Date): EP 2001124723 011016;

PRIORITY (CC, No, Date): DE 10051215 001016; US 881320 010614

DESIGNATED STATES: AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI;  
LU; MC; NL; PT; SE; TR

EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI

INTERNATIONAL PATENT CLASS: **A61F-009/013** ; B23P-015/40; A61B-017/32;  
B26B-009/00; B26B-021/00; B26B-021/58; B21D-053/64

ABSTRACT EP 1199055 A1

The invention relates to a blade (1) consisting of a carrier member (7) and a foil (5) of amorphous metal joined to the carrier member via an adhesive layer (9), said amorphous metal forming the cutting edge (3) of the blade. The cutting edge (3) of the blade is formed by a one-sided ground section extending over the carrier material as well as the amorphous metal. The use of the foil (5) of amorphous metal allows the **manufacture** of an inexpensive blade having a high sharpness and a, with respect to the blade body, exactly defined position of the cutting edge (3).

ABSTRACT WORD COUNT: 103

NOTE: Figure number on first page: 3

LEGAL STATUS (Type, Pub Date, Kind, Text):

Application: 020424 A1 Published application with search report  
Examination: 021218 A1 Date of request for examination: 20021023  
Examination: 030129 A1 Date of dispatch of the first examination  
report: 20021212

LANGUAGE (Publication,Procedural,Application): English; English; English

...SPECIFICATION a surgical blade, having an amorphous cutting edge as well as to a method for **manufacturing** the same.

Background of the Invention

Up to now, a variety of different materials from...

...on a knife.

A blade made of stainless steel, on the other hand, can be **manufactured** in a comparatively simple way, and offers considerable cost advantages. However, steel is comparatively soft...

...well..

The blade according to the invention is particularly suited for being

used as scalpel, **microkeratome** , or microtome.

The above-indicated and further technical solutions with their features and advantages will...

...mm and a thickness of about 0.25 mm. The blade body comprises an elongated **hole 4** spaced apart from the cutting edge 3 and extending transversely thereto. The elongated **hole 4** serves to receive a support, which is not shown, by which the blade 1 can be guided. The elongated **hole 4** has a dimension of about 4.9 mm in the direction of the width... up the possibility to clearly identify the blade and differentiate it from products of other **manufacturers** .

Since the foil 5 of amorphous metal is applied as cover portion on the strip...

...metal is not damaged.

The curved blade 41 shown in Fig. 5 is suited as **microkeratome** . However, when the curved blade 41 is used in the device shown in Fig. 4...

10/5,K/2 (Item 2 from file: 348)  
DIALOG(R)File 348:EUROPEAN PATENTS  
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01278074

**A surgical swivel fixation ring device for use in eye surgery**

PATENT ASSIGNEE:

Becton, Dickinson and Company, (2594831), 1 Becton Drive, Franklin Lakes,  
New Jersey 07417, (US), (Applicant designated States: all)

INVENTOR:

Cote, Dana, 22 Lewis Lane, Saugus, Massachusetts 01906, (US)

LEGAL REPRESENTATIVE:

Ruffles, Graham Keith et al (43041), MARKS & CLERK, 57-60 Lincoln's Inn  
Fields, London WC2A 3LS, (GB)

PATENT (CC, No, Kind, Date): EP 1099432 A2 010516 (Basic)

APPLICATION (CC, No, Date): EP 2000118816 000831;

PRIORITY (CC, No, Date): US 437777 991110

DESIGNATED STATES: AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI;  
LU; MC; NL; PT; SE

EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI

INTERNATIONAL PATENT CLASS: **A61F-009/007**

ABSTRACT EP 1099432 A2

A surgical fixation ring is described which allows fixation of the eye. The device has an adjustable swivel fixation ring that facilitates a full 180(degree) rotation. The ring further includes protrusions that are designed to atraumatically attach to the sclera. The fixation ring is designed with an arcuate bottom that mates with the sclera to further decrease potential slippage of the device by mating with the curvature of the sclera. The device is preferably a unitary structure that could be reused after re-sterilization by steam, gamma, ETO or other such methods. The proposed device provides easy re-use and cleaning due to the elimination of any small crevices between the fixation ring and handle assembly. The device also provides a smaller working diameter that allows more clearance between the ring base and other facial obstructions. The arcuate bottom of the ring is contoured to the curvature of the sclera gives more surface contact to the device to assist and secure fixation. Finally, due to the nature of the living hinge design and the attachment position of the hinge to the segmented ring base, the protrusions on the

arcuate bottom are always in the correct orientation pointing toward the sclera. This feature allows the surgeon to usually manipulate the handle assembly to multiple orientations without the potential of the ring base swiveling away from the scleral surface.

ABSTRACT WORD COUNT: 226

NOTE: Figure number on first page: 1

LEGAL STATUS (Type, Pub Date, Kind, Text):

Application: 010516 A2 Published application without search report  
LANGUAGE (Publication,Procedural,Application): English; English; English

...SPECIFICATION is fully alert and can inadvertently move his or her eyes during advancement of the **scalpel** into the **eye**. This can cause the sharp edges of the scalpel to uncontrollably widen the incision greater ...

...effect on inhibiting patient's eye movement during surgery. A number of devices have been **manufactured** to solve this problem. These devices generally have a semi-circular ring with or without...

10/5,K/5 (Item 5 from file: 348)

DIALOG(R)File 348:EUROPEAN PATENTS

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00428087

**Automatic corneal shaper.**

**Automatischer Hornhautschaber.**

**Racloir automatique pour la cornea.**

PATENT ASSIGNEE:

Ruiz, Luis Antonio, (1229920), Carrera 9 No. 83-15 Piso 4, Bogota, (CO),  
(applicant designated states:

AT;BE;CH;DE;DK;ES;FR;GB;GR;IT;LI;LU;NL;SE)

Lenchig, G. Sergio, (1229930), Calle 125, No. 40-28 Int. 22, Bogota, (CO)  
, (applicant designated states:

AT;BE;CH;DE;DK;ES;FR;GB;GR;IT;LI;LU;NL;SE)

INVENTOR:

Ruiz, Luis Antonio, Carrera 9 No. 83-15 Piso 4, Bogota, (CO)

Lenchig, G. Sergio, Calle 125, No. 40-28 Int. 22, Bogota, (CO)

LEGAL REPRESENTATIVE:

Kooy, Leendert Willem et al (20411), OCTROOIBUREAU VRIESENDORP & GADE  
P.O. Box 266, NL-2501 AW The Hague, (NL)

PATENT (CC, No, Kind, Date): EP 442156 A1 910821 (Basic)  
EP 442156 B1 931215

APPLICATION (CC, No, Date): EP 90201166 900509;

PRIORITY (CC, No, Date): US 479692 900214

DESIGNATED STATES: AT; BE; CH; DE; DK; ES; FR; GB; GR; IT; LI; LU; NL; SE

INTERNATIONAL PATENT CLASS: **A61F-009/00**

CITED PATENTS (EP A): EP 261242 A

ABSTRACT EP 442156 A1

An automatic mechanical device (10) capable of performing lamellar corneal resections that comprises:

- driving mean (20),
- mobile means including cutting means (50) for performing corneal resections,
- eyeball retaining means (90) so that the resection can be made with

precision, and

- transmission means (30) designed to automate the resecting operation. A similar device is capable of performing operations of resection on the corneas of eyes in an automatic fashion, in such a way as to ensure the precision and quality of the resection for correcting both myopic and hyperopic conditions. (see image in original document)

ABSTRACT WORD COUNT: 98

LEGAL STATUS (Type, Pub Date, Kind, Text):

Application: 910821 A1 Published application (A1with Search Report  
;A2without Search Report)

Examination: 920408 A1 Date of filing of request for examination:  
920207

Examination: 920506 A1 Date of despatch of first examination report:  
920325

Grant: 931215 B1 Granted patent

Oppn None: 941207 B1 No opposition filed

LANGUAGE (Publication,Procedural,Application): English; English; English

...SPECIFICATION in the sequel to the surgery performance.

Another type of mechanical device for performing eye **surgery** includes a cutting element for performing the operation of resection on the cornea of the eye. There are currently some few of these devices, known as **microkeratomes** (MKM) on the market, and they are suitable for performing Myopic Kerato-mileusis-In-Situ...parts include jacket 29 and other components. Said shaft end 28 is introduced through a **hole** in the threaded area 35 (see Figures 3A and 3B) of the upper body 30...

...shaft 31 upon mutual engagement of the two, that is the threaded area 35 of **the** transmission shaft and the threaded area of the pinion-shaft 31. The eccentric 21 fits into a vertical **slot** along the body of the blade holder 40. An oscillating motion is imparted to said...

...with rounded corners, comprising on one of its wider faces three horizontal, triangular wedge-shaped **slots**. On the opposite side, the vertical **slot** referred to above is located. This is the vertical **slot** into which the eccentric 21 will be inserted to impart the transverse oscillatory motion to...

10/5,K/9 (Item 9 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT

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00938313 \*\*Image available\*\*

**BLADE FOR USE WITH A SURGICAL TOOL FOR MAKING INCISIONS FOR SCLERAL EYE IMPLANTS**

Patent Applicant/Assignee:

RAS HOLDING CORP, 5910 North Central Expressway, Suite 1770, Dallas, TX  
75206, US, US (Residence), US (Nationality)

Inventor(s):

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Legal Representative:

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Galleria Tower, 13155 Noel Road, Dallas, TX 75240, US,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200271992 A1 20020919 (WO 0271992)  
Application: WO 2002US5471 20020222 (PCT/WO US0205471)  
Priority Application: US 2001271028 20010223

Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU  
CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP  
KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO  
RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW  
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR  
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG  
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW  
(EA) AM AZ BY KG KZ MD RU TJ TM

Main International Patent Class: **A61F-009/013**

International Patent Class: **A61F-002/14**

Publication Language: English

Filing Language: English

#### English Abstract

A surgical blade (1140) is disclosed for use with a surgical tool (1100) for making incisions in the sclera (102) of an eye (100) to form a scleral pocket (120) to receive a scleral prosthesis (200). The surgical blade (1140) comprises a rotatable support arm (4010) capable of being rotated by the surgical tool (1100) and a detachable curved cutting blade (4020) for making incisions in the sclera (102) of an eye (100). The surgical tool (1100) causes the curved cutting blade (4020) to advance through the sclera (102) to form an incision having dimensions to receive a scleral prosthesis (200). When the incision is complete the curved cutting blade (4020) is detached from the rotatable support arm (4010). The curved cutting blade (4020) is then removed from the incision by pulling the curved cutting blade (4020) forward out of the incision. The incision has the exact dimensions to receive a scleral prosthesis (200).

#### Legal Status (Type, Date, Text)

Publication 20020919 A1 With international search report.

Examination 20030116 Request for preliminary examination prior to end of 19th month from priority date

#### Detailed Description

... of the blade mount housing and blade guide and blade placed in contact with an **eye** showing how a **blade** passes through the blade guide when the blade is rotated to make incisions in the...when deformed such as a memory metal (e.g., nitinol).

Scleral prosthesis 200 may be **manufactured** by any conventional technique appropriate to the material used, such as machining, injection molding, heat...place by conventional means such as a screw 1740. Drive shaft 1640 extends through an **aperture** in base plate 1730 so that base plate 1730 also provides support for drive shaft...

...side view of drive shaft housing 1120 and blade mount housing 1130 and blade 1140.

**Aperture** 2110 is provided to receive screw 1610 to fasten drive shaft housing 1120 within base...

...seal the juncture between the receptacle of base housing 1110 and drive shaft housing 1120. **Aperture** 2130 is provided to receive screw 1740 to fasten base plate 1730 within blade mount...

...of blade guide 2500 showing how curved cutting blade 1820 passes through first 39 blade **slot** 2520 of blade guide 2500, and through sclera 102 of eye 100, and through second blade **slot** 2540 of blade guide 2500 when support arm 1810 of blade 1140 is rotated.

Curve 2710 represents the surface contour of sclera 102 of 5 **eye** 100 before **blade** guide 2500 is placed in contact with eye 100. Curve 2720 represents the surface contour of **eye** 100 after **blade** guide 2500 is placed in contact with sclera 102 of eye 100. Pressure applied to...outline. In this view curved cutting blade 1820 of blade 1140 is retracted. First blade **slot** 2520 and second blade **slot** 2540 of blade guide 2500 are visible...

10/5,K/12 (Item 12 from file: 349)  
DIALOG(R)File 349:PCT FULLTEXT  
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00884159 \*\*Image available\*\*

**OPHTHALMIC SURGICAL SYSTEM AND METHOD**

Patent Applicant/Inventor:

DYBBS Alexander, 2588 Edgerton Road, Cleveland, OH 44118, US, US  
(Residence), US (Nationality)

Legal Representative:

JACOBS Christopher (et al) (agent), Renner, Otto, Boisselle & Sklar, LLP  
1621 Euclid Ave., Nineteenth Floor, Cleveland, OH 44115, US,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200217834 A2 20020307 (WO 0217834)

Application: WO 2001US27167 20010901 (PCT/WO US0127167)

Priority Application: US 2000229967 20000901

Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU

CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP

KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PH PL PT RO RU

SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Main International Patent Class: **A61F-009/013**

Publication Language: English

Filing Language: English

**English Abstract**

A system (20) for ophthalmic surgery includes a control assembly (24) placed away from the patient to prevent contamination, and a sterile disposable **microkeratome** (22) for performing surgery on a patient's eye. The disposable **microkeratome** is connected to the reusable control assembly by a cable (28). The **microkeratome** includes a base that sits on the eye, and a carriage that supports and guides a cutting blade as it moves relative to the base. The base includes a main portion that holds the **microkeratome** on the eye and a handle that extends away from the main portion. The cable is connected to the **microkeratome** at an end of the handle spaced from the main portion to help maintain the sterility of that portion of the **microkeratome**.

Legal Status (Type, Date, Text)

Publication 20020307 A2 Without international search report and to be

republished upon receipt of that report.

#### Detailed Description

The invention relates to an ophthalmic surgical system and method including a disposable surgical **microkeratome** and, more particularly, to an automated surgical system and method for using such a...

...the cutting blade. The handle includes few, simple components, is disposable as part of the **microkeratome**, and can be preassembled and connected to the base and the carriage. The handle can ...

...the base 90 opposite the handle 96 and between the guides 102, a generally circular **opening** 106 is provided for receiving a cornea to therethrough. The **opening** communicates through the top surface (and actually top wall) of the base to a substantially...

10/5,K/13 (Item 13 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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00864572 \*\*Image available\*\*

#### **CUTTING BLADE AND CUTTING BLADE ASSEMBLY FOR OPHTHALMIC PROCEDURES**

Patent Applicant/Assignee:

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Inventor(s):

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RAM Michael J, 1 Horseshoe Road, Bell Canyon, CA 91307, US,

Legal Representative:

RAM Michael J (et al) (agent), Koppel & Jacobs, Suite 107, 555 St.  
Charles Drive, Thousands Oaks, CA 91360, US,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200197729 A1 20011227 (WO 0197729)

Application: WO 2001US19611 20010620 (PCT/WO US0119611)

Priority Application: US 2000213964 20000623; US 2001884314 20010619

Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU

CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR

KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE

SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Main International Patent Class: **A61F-009/013**

Publication Language: English

Filing Language: English

#### English Abstract

A blade and a blade assembly wherein the blade has a front, beveled, sharpened edge (13), two side edges (14, 16) meeting at a point (18) spaced from the front edge and at least one attachment structure (20, 22) extending outwardly from each side edge. A blade holder, which extends beyond the side edges and attachment structures of the blade, sits on a top surface of the blade and is attached to the blade by a portion



thereof which receives the attachment structures. The holder has an **opening** in an exposed surface to receive an extension from a drive mechanism such that when the drive mechanism is activated the blade is caused to vibrate or oscillate. The blade is oscillated in a lateral fashion when driven by a rod rotating along a circular path.

Legal Status (Type, Date, Text)

Publication 20011227 A1 With international search report.

Publication 20011227 A1 Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

Examination 20021010 Request for preliminary examination prior to end of 19th month from priority date

#### Detailed Description

... in the cornea around the pupil of the eye These devices, commonly referred to as **microkeratomes**, are placed on the cornea and held in place by suction applied to the periphery...

...the blade by a portion thereof which receives the attachment structure. The holder has an **opening** in an exposed surface to receive an extension from a drive mechanism such that when...

...cover. As shown in Figure 3, the blade holder 24 has a non-circular **aperture** 30 in the top thereof to receive a drive mechanism 50. Typically, as shown in...

10/5,K/26 (Item 26 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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00463310 \*\*Image available\*\*

#### **SURGICAL MICROTOMES**

#### **MICROTOMES CHIRURGICAUX**

Patent Applicant/Assignee:

KLOPOTEK Peter J,

Inventor(s):

KLOPOTEK Peter J,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9853774 A1 19981203

Application: WO 98US11211 19980601 (PCT/WO US9811211)

Priority Application: US 97866718 19970530

Designated States: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES

FI GB GE GH GM GW HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD

MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US

UZ VN YU ZW GH GM KE LS MW SD SZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT BE

CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN

ML MR NE SN TD TG

Main International Patent Class: **A61F-009/013**

Publication Language: English

#### English Abstract

Methods and apparatus are disclosed for removal of biological tissue slices or layers, preferably in the form of lamellar sections (4) of predetermined shape and thickness employing a reference member (12) that engages a target tissue site and cooperates with a cutter (14) in order

to remove the tissue segment or lamella. The cutter can include a flexible cutting element such as a wire or band element that is brought into physical contact with a guiding edge (8) integrated with, or otherwise coupled to, the reference member. Alternatively, the cutter can include a stiff rigid blade element (14B) that is maintained in contact with the guiding edge. The cutter is drawn along a path defined by the guide edge through the tissue to sever, at least partially, a tissue section. In one particularly useful aspect of the invention, devices for keratectomy are disclosed employing an ocular reference member that engages the upper central region of the cornea and cooperates with a cutter to remove a lamellar segment from the cornea. Such lamellar resections are useful in preparing the cornea for further surgery (by mechanical or laser surgical techniques), or in performing refractive keratectomy directly upon the eye, or in treating (e.g., smoothing) the corneal surface to correct abnormalities, (e.g., to remove ulcerated tissue or otherwise improve the optical properties of the cornea).

#### Detailed Description

... designed for the removal of corneal tissue they are often referred to as keratomes or **micro - keratomes**...

...are useful in constructing reference members are porous glasses, such as the VICOR TM glass **manufactured** by the Corning Glass Company (New York, New York). Such porous glass materials can in...vacuum line 124 can be connected to the ring 120 such that a plurality of **orifices** in the bottom surface 122 of the ring is used to secure the ring to...

10/5,K/27 (Item 27 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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00458284 \*\*Image available\*\*

#### **IMPROVED AUTOMATIC SURGICAL DEVICE AND CONTROL ASSEMBLY FOR CUTTING A CORNEA**

Patent Applicant/Assignee:

HELLENKAMP Johann F,

Inventor(s):

HELLENKAMP Johann F,

SHERIN Richard J,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9848748 A2 19981105

Application: WO 98US8396 19980424 (PCT/WO US9808396)

Priority Application: US 97845171 19970425

Designated States: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES

FI GB GE GH GM GW HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD

MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ

VN YU ZW GH GM KE LS MW SD SZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT BE CH

CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN ML

MR NE SN TD TG

Main International Patent Class: **A61F-009/013**

International Patent Class: A61M-001/00

Publication Language: English

#### English Abstract

A surgical device for cutting substantially across a cornea of an eye of a patient, the device including a positioning ring structured to be

temporarily attached to a portion of the eye surrounding the cornea to be cut, and defining an **aperture** sized to receive and expose the cornea to be cut. The surgical device further includes a cutting head assembly structured to be guided and driven over an upper surface of the positioning ring in a generally arcuate path, and having a cutting element positioned therein and structured to oscillate laterally to facilitate smooth and effective cutting of the cornea. The cutting head assembly is structured to be detachably coupled to the positioning ring by a coupling member which permits movement of the cutting head assembly relative to the positioning ring along the generally arcuate path, but maintains sufficient engagement therebetween to ensure that smooth, steady, driven movement is maintained.

#### Detailed Description

... in the art) for being cut by a very fine microsurgical instrument known as a **microkeratome**. The **microkeratome** is generally a blade carrying device that must be manually pushed or mechanically driven in...

...undetectable cut corneal tissue edges. In addition, the present invention is directed towards an improved **microkeratome** cutting blade assembly that permits quick and easy installation and removal from the **microkeratome** housing, without excessive manipulation. The present invention is further directed towards a control assembly for a **microkeratome** device that is capable of detecting problems encountered during the surgical cutting of the cornea...between the front and rear trailing portions. The cutting blade further includes at least one **aperture** formed therein, and preferably, a pair of **apertures** disposed in the rear, trailing portion in substantially aligned relation with one another. Preferably, the...

...having an oval shape, although the blade holder 320 could be formed to include a **slot**, groove or other shaped recess without departing from the scope of the present invention. Also...

10/5,K/29 (Item 29 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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00437437 \*\*Image available\*\*

MICROKERATOME

MICROKERATOME

Patent Applicant/Assignee:

INSTITUTO BARRAQUER DE AMERICA,  
CARRIAZO Cesar C,  
BARRAQUER Jose I,  
BARRAQUER Jose I Jr,

Inventor(s):

CARRIAZO Cesar C,  
BARRAQUER Jose I,  
BARRAQUER Jose I Jr,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9827901 A1 19980702

Application: WO 97EP7248 19971222 (PCT/WO EP9707248)

Priority Application: US 96772698 19961223; US 9756775 19970825

Designated States: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES  
FI GB GE GH GM GW HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD  
MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US

UZ VN YU ZW GH GM KE LS MW SD SZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT BE  
CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN ML  
MR NE SN TD TG

Main International Patent Class: **A61F-009/013**

Publication Language: English

#### English Abstract

A **microkeratome** and related surgical methods for performing lamellar keratotomies are provided. The **microkeratome** includes a guide ring assembly for placement on the eyeball, or ocular globe such that the globe's cornea protrudes therethrough. Means are provided for temporarily fixing the guide ring to the ocular globe, immobilizing the eyeball relative to the instrument. A cutting blade suitable for corneal resections is carried in a cutting head over the guide ring through a cutting path defined by the guide ring. An adjustable float head, also generally known as a plaque, is connected to the cutting head for at least partially compressing the cornea ahead of the blade, so as to set the desired thickness of the corneal resection. Means are further provided for driving the cutting head and float head across the guide ring, whereby the blade cuts at least partially through the cornea to perform the lamellar keratotomy. Various surgical corrections are obtainable through the use of arcuate and oblique plaques, as an alternative to planar plaques or float heads, where appropriate.

#### Detailed Description

... irregularities of the cornea. More particularly, the present invention relates to mechanical instruments known as **microkeratomes**, and related surgical methods for performing lamellar keratotomies...

...used with a splined output shaft, and the pivot post is provided with a grooved **opening** complementing the splined output shaft.

The preferred embodiment of the **microkeratome** further includes stop means for limiting the range through which the blade is carried through...means when the stop -means limits the range of the blade. In this manner, the **microkeratome** is returned to the position along the guide ring at which the surgery was initiated...

...brought together, Blade holder 70 exhibits an elongated cross-section similar to the shape of **slots** 46 and 35, but is somewhat smaller to allow for lateral movements of the blade holder within the **slots**. Blade holder head 72 is also of the same shape, but is reduced in size...

10/5,K/35 (Item 35 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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00232544

EYE SURGERY KNIFE BLADE AND METHOD  
**PROCEDE ET LAME TRCHANTE POUR LA CHIRURGIE DES YEUX**

Patent Applicant/Assignee:

MEDICAL STERILE PRODUCTS INC,

Inventor(s):

WISHINSKY David H,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9306800 A1 19930415

Application: WO 92US8332 19921001 (PCT/WO US9208332)  
Priority Application: US 91389 19911001  
Designated States: JP AT BE CH DE DK ES FR GB GR IE IT LU MC NL SE  
Main International Patent Class: **A61F-009/00**  
International Patent Class: B26B-19:00; A61B-10:00  
Publication Language: English

#### English Abstract

A surgical knife blade (10) for forming an incision of predetermined length in bodily tissue includes indicia (42) disposed adjacent opposing portions of a cutting edge (32) such that alignment of the opposing indicia (42) with the tissue during insertion of the knife blade (10) in the tissue produces an incision of the predetermined length. A method of performing cataract surgery utilizes the surgical knife blade (10) to precisely form a smaller incision for lens removal and a larger incision for implant of the intraocular lens.

#### Detailed Description

##### **Eye Surgery Knife Blade** and Method

##### BACKGROUND OF THE INVENTION

##### Field Of The Invention

The present invention pertains to...precisely formed utilizing conventional surgical knife blades are limited due to the knife blades being **manufactured** in a limited number of sizes,, or widths, Consequently, in many cases the actual lengths...in the body, such as stainless steel and the like, The blade 10 can be **fabricated** by forming blanks having the desired configuration from stainless steel by any suitable method including ...7 and 8 show blade 130 being utilized in cataract surgery on the eye. After **opening** the conjunctiva, the sclera is penetrated with the point 142 which is laterally offset from...

#### Claim

... is aligned with the tissue to form an incision of a predetermined length; removing the **knife blade** from the **eye** ; and removing the natural lens from the eye through the incision,

14 A method of...

Set	Items	Description
S1	271	MICROKERATOME? ? OR MICRO()KERATOME? ? OR (EYE? ? OR OCULAR? OR INTRAOCULAR? OR OPHTHALM?) (3N) (KNIFE OR KNIVES OR BLADE? ? OR SCALPEL? ?)
S2	633223	FABRICAT? OR MANUFACTUR?
S3	444823	TAPER? OR CONVEX? OR CURV? OR CAMBER? OR ARCH???? OR BEND? OR BENT
S4	1180055	SEPARAT? OR DIVID? OR DIVIS? OR DISCONNECT? OR SPLIT? OR D-ETACH?
S5	615874	SLOT OR SLOTS OR APERTURE? ? OR OPENING? ? OR HOLE? ? OR F-ENESTRA? OR ORIFICE? ?
S6	102	S1 AND S2 AND S5
S7	40	S6 AND IC=A61F
S8	37	S7 NOT PY>2002
S9	37	IDPAT (sorted in duplicate/non-duplicate order)
S10	37	IDPAT (primary/non-duplicate records only)

? show files

File 348:EUROPEAN PATENTS 1978-2003/Jun W03

(c) 2003 European Patent Office

File 349:PCT FULLTEXT 1979-2002/UB=20030612,UT=20030605

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Biblio  
Patents

8/5/1 (Item 1 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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014979723 \*\*Image available\*\*  
WPI Acc No: 2003-040238/200303  
XRPX Acc No: N03-031587

Microkeratome blade fabrication method for ophthalmic surgical  
procedures, involves electric discharge machining blade blanks to form  
curved posterior walls and interior aperture

Patent Assignee: WORTRICH T (WORT-I)

Inventor: WORTRICH T

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20020143351	A1	20021003	US 2001272021	A	20010228	200303 B
			US 200285190	A	20020227	

Priority Applications (No Type Date): US 2001272021 P 20010228; US  
200285190 A 20020227

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20020143351	A1		9	A61F-009/00	Provisional application US 2001272021

Abstract (Basic): US 20020143351 A1

NOVELTY - The blade blanks are electric discharge machined to form  
curved posterior walls extending substantially continuously between the  
opposite ends of the cutting edges and an interior aperture in each  
blade blank.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for  
microkeratome blade.

USE - For fabricating microkeratome blade (claimed) used in  
ophthalmic surgical procedures such as laser in-situ keratomileusis  
(LASIK).

ADVANTAGE - Since blade blanks are electric discharge machined to  
form curved posterior walls and interior aperture, the introduction  
of stress points and local non-uniformities in the course of  
manufacture is minimized and manufacturing process is simplified,  
thereby obtaining a high yield during production.

DESCRIPTION OF DRAWING(S) - The figure shows a perspective view of  
microkeratome blade and holder.

pp; 9 DwgNo 1/8

Title Terms: BLADE; FABRICATE; METHOD; OPHTHALMIC; SURGICAL; PROCEDURE;  
ELECTRIC; DISCHARGE; MACHINING; BLADE; BLANK; FORM; CURVE; POSTERIOR;  
WALL; INTERIOR; APERTURE

Derwent Class: P32; X24

International Patent Class (Main): A61F-009/00

File Segment: EPI; EngPI

8/5/2 (Item 2 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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003269328  
WPI Acc No: 1982-B7314E/198207

Die for mfr. of compression springs with eyes - end of guide tube has two  
rounded lugs with slit between them for passage of bending back blade

Patent Assignee: EST VAZAP PROD UNIO (EVAZ-R)

X

Inventor: AUS A R; SETKOV A A  
Number of Countries: 001 Number of Patents: 001  
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
SU 827224	B	19810507				198207 B

Priority Applications (No Type Date): SU 2731036 A 19790228

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
SU 827224	B		3		

Abstract (Basic): SU 827224 B

The die has a mechanism for bending back and turning the spring eyes comprising a guide tube (1) for the spring and a carriage (2) with a rotatable bending-back blade (4). To be able to **manufacture** springs with eyes from an endless spiral made from thinner wire the end section of the tube (1) facing the carriage (2) has two lugs with a height greater than the diameter of the spiral wire. The lateral surface of the carriage (2) has a **slot** for the lugs. The effective edges of the lugs are rounded off and are formed by the plane of the segmented section of the guide tube. The bending back blade (4) passes through a slit between the two lugs. During the positive motion of the carriage (2) the bending-back blade (4) clamps the turns of the spring (7) to a fixed stop (5) acting as a fixed blade and cuts off the required length of spring.

During the return motion of the carriage the rear section of the bending-back **blade** (4) grips the **eye** of the spring (7) and pulls it into a gap between the carriage (2) and the die housing (3). The eye of the spring stops when it reaches the tube lugs until it is freed by the end of the blade (4) passing through the slit between the lugs. The round section of the lugs corrects the direction the finished spring takes when it is ejected. Bul.17/7.5.81 (3pp Dwg.No.1)

Title Terms: DIE; **MANUFACTURE** ; COMPRESS; SPRING; EYE; END; GUIDE; TUBE; TWO; ROUND; LUG; SLIT; PASSAGE; BEND; BACK; BLADE

Derwent Class: P52

International Patent Class (Additional): B21F-035/02

File Segment: EngPI



Set	Items	Description
S1	174	MICROKERATOME? ? OR MICRO()KERATOME? ? OR (EYE? ? OR OCULAR? OR INTRAOCULAR? OR OPHTHALM?) (3N) (KNIFE OR KNIVES OR BLADE? ? OR SCALPEL? ?)
S2	1527596	FABRICAT? OR MANUFACTUR?
S3	889190	TAPER? OR CONVEX? OR CURV? OR CAMBER? OR ARCH???? OR BEND? OR BENT
S4	2213154	SEPARAT? OR DIVID? OR DIVIS? OR DISCONNECT? OR SPLIT? OR D-ETACH?
S5	2480302	SLOT OR SLOTS OR APERTURE? ? OR OPENING? ? OR HOLE? ? OR F-ENESTRA? OR ORIFICE? ?
S6	2	S1 AND S2 AND S5
S7	2	IDPAT (sorted in duplicate/non-duplicate order)
S8	2	IDPAT (primary/non-duplicate records only)

? show files

File 347:JAPIO Oct 1976-2003/Feb(Updated 030603)  
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File 350:Derwent WPIX 1963-2003/UD,UM &UP=200338  
(c) 2003 Thomson Derwent

File 371:French Patents 1961-2002/BOPI 200209  
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